

Chapter 5: Morphometrics

Standard Measurements

If the turtle can be brought onboard or is on land, take standard carapace measurements: CCL, SCL_{N-T} , SCL_{N-N} , CCW, and SCW. Use a flexible fiberglass tape measure to take over-the-curve measurements and calipers for straight measurements; record in centimeters, rounded to the nearest 0.1 cm. For measurements over-the-curve (CCL and CCW), follow the curvature of the carapace. If barnacles, injury, or abnormalities affect these measurements, record details on the datasheet. For leatherbacks, take only curved measurements in general.

Also, weigh the turtle if possible. Methodology will differ slightly depending on the type of scale available, but in all cases, the turtle must be adequately restrained so there is no potential for injury from this procedure, and the scale, sling or platform used should be disinfected between animals if any sign of disease (fibropapilloma, etc.) is present.

CCL – Carapace Length, curved, notch-to-tip (standard): Record the distance between the center of the nuchal scute and the posterior tip of the longest postcentral scute, following the curvature of the dorsal centerline (Figures 5-1 and 5-2). On leatherbacks, take the measurement alongside (not over the top) the center vertebral ridge (Figure 5-3).



Figure 5-1. Curved carapace length taken with flexible fiberglass tape measure (NMFS/SEFSC photo).

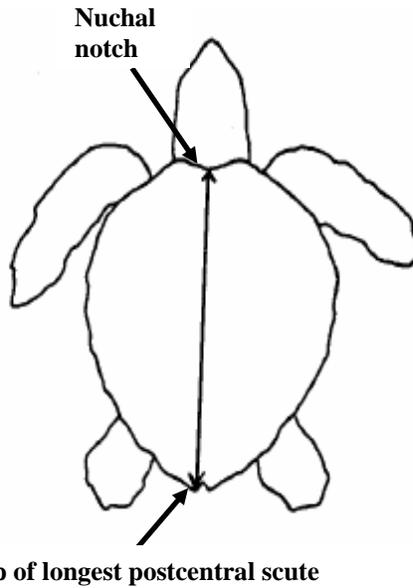


Figure 5-2. Carapace length measurement, notch to tip.

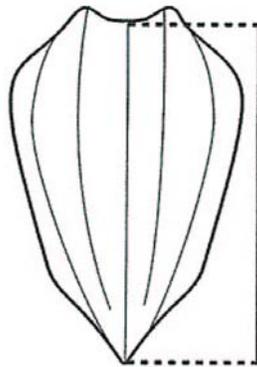


Figure 5-3. The anterior and posterior anatomical points for straight carapace length (SCL) and curved carapace length (CCL) in leatherback turtles. In both cases, length is measured from the nuchal notch (anterior edge of the carapace at the midline) to the posterior tip of the caudal peduncle [Figure and caption text taken from Bolten (1999)].

SCL_{N-T} – Carapace Length, straight, notch-to-tip (standard): Record the distance between the center of the nuchal scute and the posterior tip of the longest postcentral scute (Figures 5-1 and 5-2).

SCL_{N-N} – Carapace Length, straight, notch-to-notch (minimal): Record the distance between the center of the nuchal scute and the notch between the two postcentral scutes (not shown).

CCW – Carapace Width, curved: Record the maximum distance between the lateral edges of the carapace, measured over the curvature of the shell, perpendicular to the centerline of the carapace at the widest point (Figure 5-4). On leatherbacks, measure the width from side ridge to side ridge (ridges depicted in Figure 5-3) at the widest point.

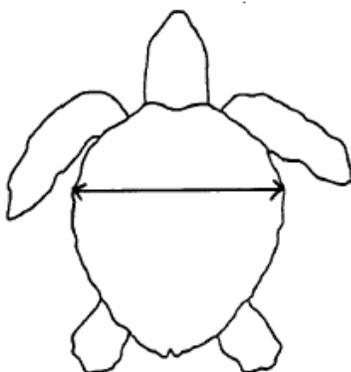


Figure 5-4. Curved carapace width (CCW) measurement

SCW – Carapace Width, straight: Record the maximum distance between the lateral edges of the carapace (Figure 5-5).



Figure 5-5. Straight carapace width (SCW) measurement taken using calipers (NMFS/SEFSC photo).